

Information Summaries

KSC Historical Report No. 1B (KHR-1B)

Space Shuttle Launches

Kennedy Space Center
January 1981 - June 2002
Total Space Shuttle Launches - 110

Space Shuttles are launched from NASA facilities at the Kennedy Space Center (KSC) in Florida. Landings have occurred at KSC and Edwards Air Force Base (EAFB) in California, the two prime end-of-mission landing sites; and one at Space Harbor (SH), formerly known as Northrup Strip, White Sands, N.M. All liftoff and landing dates are determined using Eastern Standard and Eastern Daylight Times. For more detailed information on Space Shuttle missions and payloads, refer to Space Shuttle Mission Chronology 1981-1998, KSC Release No. 12-92, Revised February 1999. See PMS-031, Major NASA Launches, for information on missions and payloads using other launch vehicles.

Columbia — OV-102
Challenger — OV-099

Discovery — OV-103
Atlantis — OV-104

Endeavour — OV-105

Note: The numbers next to the orbiter names and crew names indicate how many launches each has flown, including that flight. No number indicates first shuttle mission for that crew member.

Space Shuttle Missions

Operational Test Flights and Operational Flights

| Mission Name | Crew | Launch Date Landing Date | Orbiter | Primary Payload | Launch Pad Landing Runway |
|--------------|-----------------------|-----------------------------|-----------------------|-----------------|------------------------------|
| STS-1 | Young, Crippen | 4/12/81 4/14/81 | Columbia ¹ | — | 39A 23 EAFB |
| STS-2 | Engle, Truly | 11/12/81 11/14/81 | Columbia ² | OSTA-1 | 39A 23 EAFB |
| STS-3 | Lousma, Fullerton | 3/22/82 3/30/82 | Columbia ³ | OSS-1 | 39A 17 SH |
| STS-4 | Mattingly, Hartsfield | 6/27/82 7/4/82 | Columbia ⁴ | DoD | 39A 22 EAFB |

Operational Flights

| Mission Name Runway | Crew | Launch Date Landing Date | Orbiter | Primary Payload | Launch Pad Landing |
|------------------------|---|-----------------------------|-------------------------|--|-----------------------|
| STS-5 | Brand, Overmyer, Lenoir, J. Allen | 11/11/82 11/16/82 | Columbia ⁵ | SBS-3/Anik C-3 | 39A 22 EAFB |
| STS-6 | Weitz, Bobko, Musgrave, Peterson | 4/4/83 4/9/83 | Challenger ¹ | TDRS-1 | 39A 22 EAFB |
| STS-7 | Crippen ² , Hauck, Ride, Fabian, Thagard | 6/18/83 6/24/83 | Challenger ² | Anik C-2/ Palapa B-1 | 39A 15 EAFB |
| STS-8 | Truly ² , Brandenstein, Bluford, Gardner, Thornton | 8/30/83 9/5/83 | Challenger ³ | INSAT 1B | 39A 22 EAFB |
| STS—9 | Young ² , Shaw, Parker, Garriott, Merbold, Lichtenberg | 11/28/83 12/8/83 | Columbia ⁶ | Spacelab 1 | 39A 17 EAFB |
| STS-41-B | Brand ² , Gibson, Stewart, McNair, McCandless | 2/3/84 2/11/84 | Challenger ⁴ | ^a Westar VI/ ^a Palapa B-2 | 39A 15 KSC |
| STS-41-C | Crippen ³ , Scobee, van Hoften, Nelson, Hart | 4/6/84 4/13/84 | Challenger ⁵ | ^c Long Duration Exposure Facility | 39A 17 EAFB |
| STS 41-D | Hartsfield ² , Coats, Hawley, Resnik, Mullane, Walker | 8/30/84 9/5/84 | Discovery ¹ | SBS-4/ Telstar 3-C/ SYNCOM IV-2 | 39A 17 EAFB |

Operational Flights (continued)

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|----------|--|----------------------|--------------------------|--|-----------------|
| STS-41-G | Crippen ⁴ , McBride, Sullivan, Ride ² , Leestma, Garneau, Scully-Power | 10/5/84 10/13/84 | Challenger ⁶ | ERBS/OSTA-3 | 39A 33 KSC |
| STS 51-A | Hauck ² , Walker, J. Allen ² , Fisher, Gardner ² | 11/8/84 11/16/84 | Discovery ² | Anik D-2/ SYNCOM IV-1 | 39A 15 KSC |
| STS 51-C | Mattingly ² , Shriver, Buchli, Onizuka, Payton | 1/24/85 1/27/85 | Discovery ³ | DoD | 39A 15 KSC |
| STS 51-D | Bobko ² , Williams, Seddon, Griggs, Hoffman, Garn, Walker | 4/12/85 4/19/85 | Discovery ⁴ | Anik C-1/ ^b SYNCOM IV-3 | 39A 33 KSC |
| STS 51-B | Overmyer ² , Gregory, Lind, Thagard ² , Thornton, van den Berg, Wang | 4/29/85 5/6/85 | Challenger ⁷ | Spacelab 3 | 39A 17 EAFB |
| STS 51-G | Brandenstein ² , Creighton, Lucid, Nagel, Fabian ² , Baudry, Sultan Al-Saud | 6/17/85 6/24/85 | Discovery ⁵ | Arabsat 1-B/ Telstar 3-D/ Morelos-A | 39A 23 EAFB |
| STS 51-F | Fullerton ² , Bridges, Musgrave ² , England, Henize, Acton, Bartoe | 7/29/85 8/6/85 | Challenger ⁸ | Spacelab 2 | 39A 23 EAFB |
| STS 51-I | Engle ² , Covey, van Hoften ² , Lounge, Fisher | 8/27/85 9/3/85 | Discovery ⁶ | AUSSAT 1/ASC 1/ SYNCOM IV-4 | 39A 23 EAFB |
| STS 51-J | Bobko ³ , Grabe, Stewart ² , Hilmers, Pailles | 10/3/85 10/7/85 | Atlantis ¹ | DoD | 39A 23 EAFTB |
| STS-61-A | Hartsfield ³ , Nagel ² , Buchli ² , Bluford ² , Dunbar, Furrer, Ockels, Messerschmid | 10/30/85 11/6/85 | Challenger ⁹ | Spacelab D-1 | 39A 17 EAFB |
| STS 61-B | Shaw ² , O'Connor, Cleave, Spring, Ross, Vela, Walker | 11/26/85 12/3/85 | Atlantis ² | Morelos-B/ AUSSAT-2/ RCA SATCOM Ku-2 | 39A 22 EAFB |
| STS 61-C | Gibson ² , Bolden, Chang-Diaz, Hawley ² , Nelson ² , Cenker, Nelson | 1/12/86 1/18/86 | Columbia ⁷ | RCA SATCOM Ku-1 | 39A 22 EAFB |
| STS 51-L | Scobee ² , Smith, McNair, Resnik, Onizuka ² , Jarvis, McAuliffe | 1/28/86 | Challenger ¹⁰ | TDRS-B | 39B |
| STS-26 | Hauck ³ , Covey ² , Lounge ² , Hilmers ² , Nelson ³ | 9/29/88 10/3/88 | Discovery ⁷ | TDRS-3 | 39B 17 EAFB |
| STS-27 | Gibson ³ , Gardner ¹ , Shepherd, Mullane ² , Ross ² | 12/2/88 12/6/88 | Atlantis ³ | DoD | 39B 17 EAFB |
| STS-29 | Coats ² , Blaha, Buchli ³ , Springer, Bagian | 3/13/89 3/18/89 | Discovery ⁸ | TDRS-4 | 39B 22 EAFB |
| STS-30 | Walker, ² Grabe ² , Thagard ³ , Cleave ² , Lee | 5/4/89 5/8/89 | Atlantis ⁴ | Magellan | 39B 22 EAFB |
| STS-28 | Shaw ³ , Richards, Leestma ² , Adamson, Brown | 8/8/89 8/13/89 | Columbia ⁸ | DoD | 39B 17 EAFB |
| STS-34 | Williams ² , McCulley, E. Baker, Chang-Diaz ² , Lucid ² | 10/18/89 10/23/89 | Atlantis ⁵ | Galileo | 39B 23 EAFB |
| STS-33 | Gregory ² , Blaha ² , Musgrave ³ , Thornton ³ , Carter | 11/22/89 11/27/89 | Discovery ⁹ | DoD | 39B 4 EAFB |
| STS-32 | Brandenstein ³ , Wetherbee, Dunbar ² , Ivins, Low | 1/9/90 1/20/90 | Columbia ⁹ | SYNCOM IV-5/ ^q LDEF | 39A 22 EAFB |
| STS-36 | Creighton ² , Casper, Hilmers ³ , Mullane ³ , Thuot | 2/28/90 3/4/90 | Atlantis ⁶ | DoD | 39A 23 EAFB |
| STS-31 | Shriver ² , Bolden ² , Hawley ³ , McCandless ² , Sullivan ² | 4/24/90 4/29/90 | Discovery ¹⁰ | Hubble Space Telescope | 39B 22 EAFB |
| STS-41 | Richards ² , Cabana, Shepherd ² , Melnick, Akers | 10/6/90 10/10/90 | Discovery ¹¹ | Ulysses | 39B 22 EAFB |
| STS-38 | Covey ³ , Culbertson, Meade, Springer ² , Gemar | 11/15/90 11/20/90 | Atlantis ⁷ | DoD | 39A 33 KSC |
| STS-35 | Brand ³ , Gardner ² , Lounge ³ , Hoffman ² , Parker ² , Parise, Durrance | 12/2/90 12/11/90 | Columbia ¹⁰ | Astro-1 | 39B 22 EAFB |
| STS-37 | Nagel ³ , Cameron, Apt, Godwin, Ross ³ | 4/5/91 4/11/91 | Atlantis ⁸ | ^f Gamma Ray Observatory | 39B 33 EAFB |
| STS-39 | Coats ³ , Hammond, Harbaugh, McMonagle, Bluford ² , Hieb, Veach | 4/28/91 5/6/91 | Discovery ¹² | DoD | 39A 15 KSC |

Operational Flights (continued)

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|--------|---|---------------------|-------------------------|--|----------------|
| STS-40 | O'Connor ² , Gutierrez, Jernigan, Seddon ² , Bagian ² , Gaffney, Hughes-Fulford | 6/5/91 6/14/91 | Columbia ¹¹ | Spacelab Life Sciences-1 | 39B 22 EAFB |
| STS-43 | Blaha ³ , M. Baker, Adamson ² , Low ² , Lucid ³ | 8/2/91 8/11/91 | Atlantis ⁹ | TDRS-5 | 39A 15 KSC |
| STS-48 | Creighton ³ , Reightler, Buchli, Brown, Gemar ² | 9/12/91 9/18/91 | Discovery ¹³ | Upper Atmosphere Research Satellite | 39A 22 EAFB |
| STS-44 | Gregory ³ , Henricks, Musgrave ⁴ , Runco, J. S. Voss ² , Hennen | 11/24/91 12/1/91 | Atlantis ¹⁰ | Defense Support Program Satellite | 39A 5 EAFB |
| STS-42 | Grabe ³ , Oswald, Readdy, Thagard ⁴ , Hilmers ⁴ , Bondar, Merbold | 1/22/92 1/30/92 | Discovery ¹⁴ | IML-1 | 39A 22 EAFB |
| STS-45 | Bolden ³ , Duffy, Sullivan ³ , Leestma ³ , Foale, Frimout, Lichtenberg ² | 3/24/92 4/2/92 | Atlantis ¹¹ | ATLAS-1 | 39A 33 KSC |
| STS-49 | Brandenstein ⁴ , Chilton, Melnick ² , Akers ² , Thornton ² , Hieb ² , Thuot ² | 5/7/92 5/16/92 | Endeavour ¹ | ⁹ INTELSAT rescue and deployment | 39B 22 EAFB |
| STS-50 | Richards ³ , Bowersox, Dunbar ³ , Meade ² , Baker ² , Trinh, DeLucas | 6/25/92 7/9/92 | Columbia ¹² | USML-1 | 39A 33 KSC |
| STS-46 | Shriver ³ , A. Allen, Hoffman ³ , Ivins ² , Chang-Diaz ³ , Nicollier, Malerba | 7/31/92 8/8/92 | Atlantis ¹² | TSS-1/ ⁱ EURECA | 39B 33 KSC |
| STS-47 | Gibson ⁴ , Brown, Lee ² , Davis, Apt ² , Jemison, Mohri | 9/12/92 9/20/92 | Endeavour ² | Spacelab-J | 39B 33 KSC |
| STS-52 | Wetherbee ² , M. Baker ² , Shepherd ³ , Jernigan ² , Veach ² , MacLean | 10/22/92 11/1/92 | Columbia ¹³ | ^h Lageos II/ USMP-1 | 39B 33 KSC |
| STS-53 | Walker ³ , Cabana ² , Bluford ⁴ , J. S.Voss ² , Clifford | 12/2/92 12/9/92 | Discovery ¹⁵ | DoD | 39B 22 EAFB |
| STS-54 | Casper ² , McMonagle ² , Runco Jr. ² , Harbaugh ² , Helms | 1/13/93 1/19/93 | Endeavour ³ | TDRS-6 | 39B 33 KSC |
| STS-56 | Cameron ² , Oswald ² , Cockrell, Foale ² , Ochoa | 4/8/93 4/17/93 | Discovery ¹⁶ | ATLAS-2 | 39B 33 KSC |
| STS-55 | Nagel ⁴ , Henricks ² , Ross ⁴ , Precourt, Harris Jr., Walter, Schlegel | 4/26/93 5/6/93 | Columbia ¹⁴ | Spacelab D-2 | 39A 22 EAFB |
| STS-57 | Grabe ⁴ , Duffy ² Low ³ , Sherlock, J. E. Voss, Wisoff | 6/21/93 7/1/93 | Endeavour ⁴ | SPACEHAB-1/ ⁱ EURECA retrieval | 39B 33 KSC |
| STS-51 | Culbertson Jr. ² , Readdy ² , Newman, Bursch, Walz | 9/12/93 9/22/93 | Discovery ¹⁷ | ACTS-TOS ORFEUS-SPAS | 39B 15 KSC |
| STS-58 | Blaha ⁴ , Searfoss, Seddon ³ , McArthur Jr., Wolf, Lucid ⁴ , Fettman | 10/18/93 11/1/93 | Columbia ¹⁵ | Spacelab Life Sciences-2 | 39B 22 EAFB |
| STS-61 | Covey ⁴ , Bowersox ² , Musgrave ⁵ , Hoffman ⁴ , Thornton ³ , Akers ³ , Nicollier ² | 12/1/93 12/13/93 | Endeavour ⁵ | Hubble Space Telescope (HST) Servicing | 39B 33 KSC |
| STS-60 | Bolden ⁴ , Reightler ² , Chang-Diaz ⁴ , Davis ² , Sega, Krikalev (Russian cosmonaut) | 2/3/94 2/11/94 | Discovery ¹⁸ | SPACEHAB-2 Wake Shield Facility-1 | 39A 15 KSC |
| STS-62 | Casper ³ , A. Allen ² , Gemar ³ , Ivins ³ , Thuot ³ | 3/4/94 3/18/94 | Columbia ¹⁶ | USMP-2/ OAST-2 | 39B 33 KSC |
| STS-59 | Gutierrez ² , Chilton ² , Godwin ² , Apt ³ , Clifford ² , Jones | 4/9/94 4/20/94 | Endeavour ⁶ | Space Radar Laboratory-1 (SRL-1) | 39A 22 EAFB |
| STS-65 | Cabana ³ , Halsell, Hieb ³ , Thomas, Walz ² , Chiao, Naito-Mukai | 7/8/94 7/23/94 | Columbia ¹⁷ | IML-2 | 39A 33 KSC |

LEGEND:

- a - Entered unplanned orbit; recovered on STS 51-A and returned to Earth on November 16, 1984.
- b - Failed to activate after deployment; was successfully repaired during STS 51-I and later entered normal service.
- c - The Long Duration Exposure Facility (LDEF) was deployed on STS 41-C on April 7, 1984, and retrieved from space during STS-32 on January 12, 1990. It was returned to KSC on 1/26/90, where the experiment trays were removed.
- d - NASA's Space Shuttle liftoff, routine space operations and orbiter landing were successful. The Department of Defense (DoD) does not discuss the success of its payloads or experiments on classified missions.
- e - Most or all payloads on these DoD missions are unclassified.
- f - When deployed on April 7, 1991, the 35,000-pound spacecraft was called the Gammy Ray Observatory (GRO). NASA announced on September 23, 1991, that it was renaming the satellite the Arthur Holly Compton Gamma Ray Observatory or Compton Observatory in honor of the late Nobel Prize-winning physicist.
- g - INTELSAT VI (F3) was launched into space aboard a Titan launch vehicle in March 1990. The Titan's second stage failed to separate from the satelllte's perigee kick motor; without the extra boost from the kick motor, the INTELSAT satellite remained in an unusable low orbit. The STS-49 crew retrieved the satellite in the final of three space walks, and redeployed it with a new kick motor.
- h - LAGEOS 1 was launched in 1976 on a Delta expendable vehicle.
- i - The European Retrievable Carrier, or EURECA, was deployed on August 2, 1992, during STS-46. The free-flying platform with 15 scientific instruments was retrieved during Mission STS-57, on June 24, 1993.

Operational Flights (continued)

| Mission Name | Crew | Launch Date Landing Date | Orbiter | Primary Payload | Launch Pad Landing Runway |
|--------------|---|-----------------------------|-------------------------|---|------------------------------|
| STS-64 | Richards ⁴ , Hammond ² , Helms ² , Meade ³ , Lee ³ , Linenger | 9/9/94 9/20/94 | Discovery ¹⁹ | Lidar In-Space Technology Experiment (LITE) | 39B 04 EAFB |
| STS-68 | M. Baker ³ , Wilcutt, Jones ² , Bursch ² , Wisoff ² , Smith | 9/30/94 10/11/94 | Endeavour ⁷ | SRL-2 | 39A 22 EAFB |
| STS-66 | McMonagle ³ , Brown ² , Ochoa ² , Tanner, Parazynski, Clervoy | 11/3/94 11/14/94 | Atlantis ¹³ | ATLAS-3/ CRISTA-SPAS | 39B 22 EAFB |
| STS-63 | Wetherbee ³ , Collins, Foale ³ , J.E. Voss ² , Harris Jr. ² , Titov ⁴ | 2/3/95 2/11/95 | Discovery ²⁰ | SPACEHAB-3/ MIR Spartan-204 | 39B 15 KSC |
| STS-67 | Oswald ³ , Gregory, Jernigan ³ , Grunsfeld, Lawrence, Parise ² , Durrance ² | 3/2/95 3/18/95 | Endeavour ⁸ | Astro-2 | 32A 22EAFB |
| STS-71 | Gibson ⁵ , Precourt ² , E. Baker ³ , Dunbar ⁴ , Harbaugh ³ , Solovyev ⁴ , Budarin, Return from MIR: Dezhurov, Strekalov ⁶ , Thagard; Solovyev ⁴ , Budarin stay on MIR | 6/27/95 7/7/95 | Atlantis ¹⁴ | 1st MIR docking/ crew transfer | 39A 15 KSC |
| STS-70 | Henricks ³ , Kregel, Currie ² , Thomas ² , Weber | 7/13/95 7/22/95 | Discovery ²¹ | TDRS-7 | 39B 33 KSC |
| STS-69 | Walker ⁴ , Cockrell ² , J.S. Voss ³ , Newman ² , Gernhardt | 9/7/95 9/18/95 | Endeavour ⁹ | Spartan 201-03/ Wake Shield Facility-2 | 39A 33 KSC |
| STS-73 | Bowersox ³ , Rominger, Thornton ⁴ , Coleman, Lopez-Alegria, Leslie, Sacco Jr. | 10/20/95 11/5/95 | Columbia ¹⁸ | USML-2 | 39B 33 KSC |
| STS-74 | Cameron ³ , Halsell Jr. ² , Ross ⁵ , McArthur Jr. ² , Hadfield | 11/12/95 11/20/95 | Atlantis ¹⁵ | MIR docking-2 | 39A 33 KSC |
| STS-72 | Duffy ³ , Jett, Chiao ² , Barry, Scott, Wakata | 1/11/96 1/20/96 | Endeavour ¹⁰ | SFU retrieval/ OAST Flyer | 39B 15 KSC |
| STS-75 | A. Allen ³ , Horowitz, Chang-Diaz ⁵ , Cheli, Hoffman ⁵ , Nicollier ³ , Guidoni | 2/22/96 3/9/96 | Columbia ¹⁹ | TSS-1R/ USMP-03 | 39B 33 KSC |
| STS-76 | Chilton ³ , Searfoss ² , Lucid ⁵ , Godwin ³ , Clifford ³ , Sega ² Lucid stays on Mir | 3/22/96 3/31/96 | Atlantis ¹⁶ | SPACEHAB-SM/ MIR docking-3/ crew transfer | 39B 22EAFB |
| STS-77 | Casper ⁴ , Brown Jr. ³ , Bursch ³ , Runco Jr. ³ , Garneau ² , Thomas | 5/19/96 5/29/96 | Endeavour ¹¹ | SPACEHAB-4/ Spartan-207/IAE | 39B 33 KSC |
| STS-78 | Henricks ⁴ , Kregel ² , Helms ³ , Linnehan, Brady Jr., Favier, Thirsk | 6/20/96 7/7/96 | Columbia ²⁰ | SPACELAB-LMS | 39B 33 KSC |
| STS-79 | Readdy ³ , Wilcutt ² , Akers ⁴ , Blaha ⁵ , Apt ⁴ , Walz ³ Return from MIR: Lucid; Blaha replaces her | 9/16/96 9/26/96 | Atlantis ¹⁷ | SPACEHAB/ MIR docking-4/ crew transfer | 39A 15 KSC |
| STS-80 | Cockrell ³ , Rominger ² , Jernigan ⁴ , Jones ³ , Musgrave ⁶ | 11/19/96 12/7/96 | Columbia ²¹ | ORFEUS-SPAS II | 39B 33 KSC |
| STS-81 | M. Baker ⁴ , Jett ² , Grunsfeld ² , Ivins ⁴ , Wisoff ³ , Linenger ² Return from MIR: Blaha; Linenger replaces him | 1/12/97 1/22/97 | Atlantis ¹⁸ | SPACEHAB-DM MIR docking-5/ crew transfer | 39B 33 KSC |
| STS-82 | Bowersox ⁴ , Horowitz ² , Lee ⁴ , Hawley ⁴ , Harbaugh ⁴ , Smith ² , Tanner ² | 2/11/97 2/21/97 | Discovery ²² | Hubble Servicing Mission 2 | 39A 33 KSC |
| STS-83 | Halsell Jr. ³ , Still, J.E. Voss ³ , Thomas ³ , Gernhardt ² , Crouch, Linteris | 4/4/97 4/8/97 | Columbia ²² | MSL/ SAREX | 39A 15 KSC |
| STS-84 | Precourt ³ , Collins ² , Foale ⁴ , Noriega, Lu, Clervoy ² , Kondakova ² Return from MIR: Linenger; Foale replaces him | 5/15/97 5/24/97 | Atlantis ¹⁹ | SPACEHAB-DM MIR docking-6/ crew transfer | 39A 33 KSC |
| STS-94 | Halsell Jr. ⁴ , Still ² , J.E. Voss ⁴ , Thomas ⁴ , Gernhardt ³ , Crouch ² , Linteris ² | 7/1/97 7/17/97 | Columbia ²³ | MSL/ SAREX | 39A 33 KSC |
| STS-85 | Brown Jr. ⁴ , Rominger ³ , Davis ³ , Curbeam Jr., Robinson , Tryggvason | 8/7/97 8/19/97 | Discovery ²³ | CRISTA-SPAS (DARA) | 39A 33 KSC |
| STS-86 | Wetherbee ⁴ , Bloomfield, Titov ⁵ , Parazynski ² , Chretien ³ , Lawrence ² , Wolf ² Return from MIR: Foale; Wolf replaces him | 9/25/97 10/6/97 | Atlantis ²⁰ | SPACEHAB-DM MIR docking-7/ crew transfer | 39A 15 KSC |
| STS-87 | Kregel ³ , Lindsey, Scott ² , Chawla, Doi, Kadenyuk | 11/19/97 12/5/97 | Columbia ²⁴ | USMP-4/ Spartan-201-04 | 39B 33 KSC |
| STS-89 | Wilcutt ³ , Edwards Jr., Dunbar ⁵ , Anderson, Reilly II, Sharipov, Thomas ² Return from MIR: Wolf; Thomas replaces him | 1/22/98 1/31/98 | Endeavour ¹² | SPACEHAB-DM MIR-docking-8/ crew transfer | 39A 15 KSC |
| STS-90 | Searfoss ³ , Altman, Linnehan ² , Williams, Hire, Buckley, Pawelczyk | 4/17/98 5/3/98 | Columbia ²⁵ | Neurolab/ GAS | 39B 33KSC |

Operational Flights (continued)

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|---------|--|----------------------|-------------------------|--|----------------------|
| STS-91 | Precourt ⁴ , Gorie, Lawrence ³ , Chang-Diaz ⁶ , Kavandi, Ryumin ⁴ Return from MIR: Thomas | 6/2/98 6/12/98 | Discovery ²⁴ | SPACEHAB-SM/ GAS /AMS MIR docking-9/ crew transfer | 39A KSC |
| STS-95 | Brown ⁵ , Lindsey ² , Parazynski ³ , Robinson ² , Duque, Mukai ² , Glenn | 10/29/98 11/7/98 | Discovery ²⁵ | SPACEHAB-SM/ Spartan-201/ HOST/IEH-03 | 39B 33 KSC |
| STS-88 | Cabana ⁴ , Sturckow, Currie ³ , Ross ⁶ , Newman ³ , Krikalev ² | 12/4/98 12/15/98 | Endeavour ¹³ | Space Station Assembly flight 2A/ Unity/Hitchhiker/ MightySat-1/SAC-A | 39A 15 KSC |
| STS-96 | Rominger ⁴ , Husband, Ochoa ³ , Jernigan ⁵ , Barry ² , Payette, Tokarev | 5/27/99 6/6/99 | Discovery ²⁶ | 2nd flight to Space Station, carrying OTD, STRELA, STARSHINE | 39B 15 KSC |
| STS-93 | Collins ³ , Ashby, Hawley ⁵ , Coleman ² , Tognini ² | 7/23/99 7/27/99 | Columbia ²⁶ | Chandra X-ray Observatory | 39B 33 KSC |
| STS-103 | Brown Jr. ⁶ , Kelly, Smith ³ , Foale ⁵ , Grunsfeld ³ , Nicollier ⁴ , Clervoy ³ | 12/19/99 12/27/99 | Discovery ²⁷ | Rate Sensor Units, computer, solid state digital recorder, for repair/maintenance of Hubble Space Telescope | 39B 33 KSC |
| STS-99 | Kregel ⁴ , Gorie ² , Kavandi ² , Voss ⁵ , Mohri ² , Thiele | 2/11/00 2/22/00 | Endeavour | Shuttle Radar Topography Mission | 39A 33 KSC |
| STS-101 | Halsell Jr. ⁵ , Horowitz ³ , Weber ² , Voss ⁴ , Williams, Helms ⁴ , Usachev | 5/19/00 5/29/00 | Atlantis | SPACEHAB | 39A 15 KSC |
| STS-106 | Wilcutt ⁴ , Altman ² , Lu ² , Malenchenko, Morokov, Mastracchio, Burbank | 9/8/00 9/20/00 | Atlantis | Hardware, Supplies for ISS | 39B 15 KSC |
| STS-92 | Duffy ⁴ , Melroy, Chiao ³ , McArthur ³ , Wisoff ⁴ , Lopez-Alegria ² , Wakata ² | 10/11/00 10/24/00 | Discovery | Z1 truss, PMA-3 for ISS | 39B 22 EAFB, Cal. |
| STS-97 | Jetti ³ , Bloomfield ² , Tanner ³ , Noriega ² , Garneau ³ | 11/30/00 12/11/00 | Endeavour | Solar Arrays on P6 truss, Floating Potential Probes, supplies for ISS | 39B 15 KSC |
| STS-98 | Cockrell ⁴ , Polansky, Curbeam ² , Jones ⁴ , Ivins ⁵ | 2/7/01 2/20/01 | Atlantis | U.S. Lab Destiny, PMA2 | 39A 22 EAFB |
| STS-102 | Wetherbee ⁵ , Kelly, Thomas ³ , Richards Expedition 2 up: Voss ⁴ , Helms ⁴ , Usachev ² (RSA); Expedition 1 down: Shepherd, Gidzenko (RSA), Krikalev (RSA) | 3/8/01 3/21/01 | Discovery | MPLM Leonardo | 39B 15 KSC |
| STS-100 | Rominger ⁵ , Ashby ² , Hadfield ² , Parazynski ⁴ , Phillips, Guidoni ² , Lonchakov ¹ | 4/1/01 5/1/01 | Endeavour | Canadarm2, MPLM Raffaello | 39A 22 EAFB |
| STS-104 | Lindsey ³ , Hobaugh, Kavandi ³ , Gernhardt ⁴ , Reilly ² | 7/12/01 7/24/01 | Atlantis | Quest joint airlock | 39B 15 KSC |
| STS-105 | Horowitz ⁴ , Sturckow ² , Barry ³ , Forrester Expedition 3 up: Culbertson ³ , Dezhurov, Tyurin; Expedition 2 down: Usachev ² , Helms ⁴ , Voss ⁴ | 8/10/01 8/22/01 | Discovery | Early Ammonia Servicer | 39A 15 KSC |
| STS-108 | Gorie ³ , M. Kelly, Godwin ⁴ , Tani Expedition 4 up: Onufrienko, Bursch ⁴ , Walz ⁴ ; Expedition 3 down: Culbertson ³ , Dezhurov, Tyurin | 12/5/01 12/17/01 | Endeavour | MPLM Raffaello | 39B 15 KSC |
| STS-109 | Altman ³ , Carey, Grunsfeld ⁴ , Currie ⁴ , Linnehan ³ , Newman ⁴ , Massimino | 3/1/02 3/12/02 | Columbia | NIC-MOS, solar array RWA, PCU | 39A 33 KSC |
| STS-110 | Bloomfield ³ , Frick, Ross ⁷ , Smith ⁴ , Ochoa ⁴ , Morin, Walheim | 4/8/02 4/19/02 | Atlantis | S0 truss, Airlock Spur | 39B 33 KSC |
| STS-111 | Cockrell ⁵ , Lockhart, Chang-Diaz ⁷ , Perrin (CNES); Expedition 5 up: Korzun ² , Whitson, Treschev; Expedition 4 down: Onufriyenko, Bursch ⁴ , Walz ⁴ | 6/5/02 6/19/02 | Endeavour | MBS, MPLM Leonardo | 39A 22 EAFB |



LEGEND:

- a - Entered unplanned orbit; recovered on STS 51-A and returned to Earth on November 16, 1984.
- b - Failed to activate after deployment; was successfully repaired during STS 51-L and later entered normal service.
- c - The Long Duration Exposure Facility (LDEF) was deployed on STS 41-C on April 7, 1984, and retrieved from space during STS-32 on January 12, 1990. It was returned to KSC on January 26, 1990, where the experiment trays were removed.
- d - NASA's Space Shuttle liftoff, routine space operations and orbiter landing were successful. The Department of Defense (DoD) does not discuss the success of its payloads or experiments on classified missions.
- e - Most or all payloads on these DoD missions are unclassified.
- f - When deployed on April 7, 1991, the 35,000-pound spacecraft was called the Gammy Ray Observatory (GRO). NASA announced on September 23, 1991, that it was renaming the satellite the Arthur Holly Compton Gamma Ray Observatory or Compton Observatory in honor of the late Nobel Prize-winning physicist.
- g - INTELSAT VI (F3) was launched into space aboard a Titan launch vehicle in March 1990. The Titan's second stage failed to separate from the satellite's perigee kick motor; without the extra boost from the kick motor, the INTELSAT satellite remained in an unusable low orbit. The STS-49 crew retrieved the satellite in the final of three space walks, and redeployed it with a new kick motor.
- h - LAGEOS 1 was launched in 1976 on a Delta expendable vehicle.
- i - The European Retrievable Carrier, or EURECA, was deployed on August 2, 1992, during STS-46. The free-flying platform with 15 scientific instruments was retrieved during Mission STS-57, on June 24, 1993.